

**REMARKS/ARGUMENTS**

The non-final Office Action of February 5, 2010 has been carefully reviewed and this paper is responsive thereto. Claims 23, 25, 27-31, 33-35, 37-43 and 45-49 are pending in the application. Independent claims 23 and 29 have been amended. Claims 1-22, 24, 26, 32, 36, 44, and 50 were previously cancelled.

**Interview Summary**

Applicants' counsel would like to thank Examiner Schmidt and Primary Examiner Bumgarner for their time and consideration in participating in a telephonic interview on March 18, 2010, to discuss the invention. Applicants' counsel thanks the Examiners for indicating that the proposed amendments would be sufficient to overcome the rejection under 35 U.S.C. 101, as noted in the Interview Summary mailed March 25, 2010. During the interview, Applicants' counsel noted various significant features of the invention believed to distinguish the claims from the Osterholm reference (U.S. Patent 4,445,500) and the proposed combinations of Osterholm with other prior art. The Examiners suggested further distinguishing over the prior art with structural features. No agreement was reached. Applicants' counsel appreciated having the opportunity to discuss the case with Examiner Schmidt and Primary Examiner Bumgarner.

**Claim Rejections - 35 U.S.C. § 101**

Claims 23, 25, 27-31, 33-35, 37-43, and 45-48 were rejected under 35 U.S.C. 101 because the claimed invention was deemed to be directed to non-statutory subject matter. The Office Action stated that the claimed structure positively recites the limitation of the brain, for example claim 23 recites, "a brain fluid pumping mechanism...coupled to a patient's brain." Independent claim 23 has been amended positively recite a brain fluid pumping mechanism "having an input adapted to be inserted into a patient's brain for extracting brain fluid, and having an output." Support for this amendment can be found in the written specification as originally filed at least at page 6, paragraph [15]. Independent claim 29 has been amended to positively recite "a fluid pumping mechanism, having an input adapted to be inserted into a fluid

source selected from the group consisting of a patient's brain and a source other than a patient's brain, and having an output." Support for this amendment can be found in the written specification as originally filed at least at page 7, paragraph [18]. It is respectfully submitted that the claimed invention is indeed directed to statutory subject matter, and that this rejection should be withdrawn.

**Claim Rejections - 35 U.S.C. § 103(a)**

Claims 23 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,445,500 (Osterholm) in view of Adelman et al. (article in The Journal of General Physiology).

Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,445,500 (Osterholm) and Adelman et al. (article in The Journal of General Physiology) as applied to claim 23 above, and further in view of U.S. Patent No. 5,685,313 (Mayevsky).

Claims 27 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,445,500 (Osterholm) and Adelman et al. (article in The Journal of General Physiology) and U.S. Patent No. 5,685,313 (Mayevsky) as applied to claim 25 above, and further in view of applicant admitted prior art (AAPA).

Claims 29-31, 37, 39-43 and 45 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,445,500 (Osterholm) in view of U.S. Patent No. 6,845,264 (Skladnev et al.) and Adelman et al. (article in The Journal of General Physiology).

Claims 33 and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,445,500 (Osterholm) in view of U.S. Patent No. 6,845,264 (Skladnev et al.) and Adelman et al. (article in The Journal of General Physiology) as applied to claim 29 above, and further in view of U.S. Patent No. 5,685,313 (Mayevsky).

Claims 35, 38 and 46-48 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,445,500 (Osterholm), U.S. Patent No. 6,845,264 (Skladnev et al.), and Adelman et al. (article in The Journal of General Physiology) as applied to claim 29 above, and in view of applicant admitted prior art (AAPA).

Claims 39-41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,445,500 (Osterholm), U.S. Patent No. 6,845,264 (Skladnev et al.), and Adelman et al. (article in The Journal of General Physiology) as applied to claim 29 above, and further in view of US 2003/0215813 A1 (Roberds et al.).

Claim 49 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,445,500 (Osterholm) in view of applicant admitted prior art (AAPA), U.S. Patent No. 6,845,264 (Skladnev et al.), and Adelman et al. (article in The Journal of General Physiology).

As noted above, independent claim 23 has been amended to claim “a brain fluid pumping mechanism, having an input adapted to be inserted into a patient's brain for extracting brain fluid, and having an output. Claim 23 also claims “computer control that reads and executes stored program instructions that cause the pumping mechanism to pump the extracted fluid according to the program and measured electrical conductivity of the brain fluid to change the electrical potential difference across a nerve cell membrane in epilepsy generating brain structure by changing the ion concentration in the modulated ion-content fluid to increase the potential difference from -70 millivolts to -80 or more millivolts.”

Osterholm does not teach at least the computer control as claimed in claim 23. Osterholm is directed to apparatus for stroke treatment utilizing extravascular circulation of oxygenated synthetic nutrients to treat tissue hypoxic and ischemic disorders. The words “epilepsy” and “epileptic” do not appear in Osterholm. There is no mention in Osterholm of “computer control that reads and executes stored program instructions that cause the pumping mechanism to pump the extracted fluid according to the program and measured electrical conductivity of the brain fluid to change the electrical potential difference across a nerve cell membrane in epilepsy generating brain structure by changing the ion concentration in the modulated ion-content fluid to increase the potential difference from -70 millivolts to -80 or more millivolts” as claimed in claim 23. The only mention of a voltage amount in Osterholm is in connection with a microvolt measurement for an example of efficacy of treatment for cerebral ischemia in cats. See Osterholm at col. 25, lines 5-60. As recognized in the Office Action, Osterholm “does not specifically disclose computer control with stored programming which

controls the pumping mechanism to pump extracted fluid according to the program and measured electrical conductivity of the brain.”

The Office Action argues that Adelman et al. teach that ion concentration in the brain can be calculated using ion conductivity and that the invention claimed in claim 23 would have been obvious to a person of ordinary skill in the art at the time of invention based on the proposed combination of Osterholm and Adelman et al. These arguments, however, ignore that claim 23 recites specific structure that is not taught in the proposed combination of Osterholm and Adelman et al. Neither Osterholm or Adelman et al., either alone or collectively, teach or suggest at least “computer control that reads and executes stored program instructions that cause the pumping mechanism to pump the extracted fluid according to the program and measured electrical conductivity of the brain fluid to change the electrical potential difference across a nerve cell membrane in epilepsy generating brain structure by changing the ion concentration in the modulated ion-content fluid to increase the potential difference from -70 millivolts to -80 or more millivolts” as claimed in claim 23.

Simply put, there is no computer control that reads and executes stored program instructions as claimed. It is respectfully submitted that the recited structure in claim 23 covers what the device is, and more than sufficiently distinguishes the claimed system from the proposed combination of prior art. Again, neither Osterholm or Adelman et al., alone or in combination, teaches the computer control or stored program instructions as claimed in claim 23. No special purpose computer control or controller is found in Osterholm or Adelman as claimed in claim 23. *Accord, Ex parte Jasperson et al.*, Appeal No. 2006-3065 (B.P.A.I., Dec. 29. 2006) (reversing prior art rejection: “In contrast to the examiner’s position, we do not view the determining, comparing and adjusting recitations of claim 1 on appeal to be merely ‘intended use of the claimed invention’ (answer, page 5). In our opinion, such limitations serve to positively define structural characteristics of the controller set forth in appellants’ claim 1 .... No special purpose controller is found in [the prior art].” Opinion at p. 5).

The Office Action reliance on *In re Schreiber*, 44 U.S.P.Q.2d 1429 (Fed. Cir. 1997) and *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 U.S.P.Q.2d 1525 (Fed. Cir. 1990) to reject the pending claims is misplaced.

In *Schreiber*, the Federal Circuit held that the appellant had failed to show that the alleged anticipatory prior art inherently lacked the functionally defined limitations recited in claim 1 of the application at issue, and thus agreed with the Board that the appellant had failed to rebut the prima facie case of anticipation identified by the examiner. 44 U.S.P.Q.2d at 1432. In the present case, the Office Action admits that no prior art reference anticipates all the features of pending claim 23.

In *Hewlett Packard*, the Federal Circuit stated that apparatus claims cover what a device is, not what a device does to make the point that “[a]n invention need not operate differently than the prior art to be patentable, but need only be different.” 15 U.S.P.Q.2d at 1528. In *Hewlett Packard*, the Federal Circuit held that the accused infringer focused its argument on “operational differences” and that it failed to point out any evidence why one skilled in the art would alter the prior art to provide the claimed invention. *Id.* In the present case, the Office Action does not point to any evidence why “computer control that reads and executes stored program instructions that cause the pumping mechanism to pump the extracted fluid according to the program and measured electrical conductivity of the brain fluid to change the electrical potential difference across a nerve cell membrane in epilepsy generating brain structure by changing the ion concentration in the modulated ion-content fluid to increase the potential difference from -70 millivolts to -80 or more millivolts” as claimed in claim 23 would have been obvious to one skilled in the art at the time of invention based on Osterholm in view of Adelman.

For at least the same reasons that claim 23 is patentable, and for the additional features recited in dependent claim 25, claim 25 is patentable over the proposed combination of Osterholm, Adelman et al., and further in view of Mayevsky (U.S. Patent 5,685,313).

For at least the same reasons that claim 23 is patentable, and for the additional features recited in dependent claims 27-28, claims 27-28 are patentable over the proposed combination of

Osterholm, Adelman et al., and Mayevsky (U.S. Patent 5,685,313) as applied to claim 25, and further in view of applicant admitted prior art (AAPA).

Similarly, Osterholm does not teach the claimed features in independent claim 29. As noted above, independent claim 29, as amended, now claims “a fluid pumping mechanism, having an input adapted to be inserted into a fluid source selected from the group consisting of a patient’s brain and a source other than a patient’s brain, and having an output.” Claim 29 also claims “means for measuring the electrical conductivity of brain fluid after the modulated ion-content fluid is injected into the patient’s brain; the fluid pumping mechanism or fluid ion adjustment mechanism including means for adjusting the delivery of the modulated ion-content fluid, based upon the measured electrical conductivity of the brain fluid, said means for adjusting comprising computer control that reads and executes stored program instructions that cause the pumping mechanism to pump the extracted fluid according to the program and measured electrical conductivity of the brain fluid to change the electrical potential difference across a nerve cell membrane in epilepsy generating brain structure by changing the ion concentration in the modulated ion-content fluid to increase the potential difference from -70 millivolts to -80 or more millivolts.” Neither Osterholm, Skladnev et al. or Adelman et al., alone or in combination, teaches the computer control or the stored program instructions as claimed in claim 29.

For at least the same reasons that claim 29 is patentable, dependent claims 30-31, 47, 39-43 and 45 are patentable over the proposed combination of Osterholm, Skladnev et al. and Adelman et al., and for the additional features recited in these dependent claims.

For at least the same reasons that claim 29 is patentable, dependent claims 33-34 are patentable over the proposed combination of Osterholm, Skladnev et al. and Adelman et al. as applied to claim 29, and further in view of Mayevsky, and for the additional features recited in these dependent claims.

For at least the same reasons that claim 29 is patentable, dependent claims 35, 38 and 46-48 are patentable over the proposed combination of Osterholm, Skladnev et al. and Adelman et al. as applied to claim 29, and further in view of applicant admitted art, and for the additional features recited in these dependent claims.

Claim 49 claims "means for adjusting the delivery of the modulated ion-content fluid into the region of the patient's brain, based on the monitored electrical conductivity of the brain fluid, where the ion-content fluid is pumped to the patient's brain, said means for adjusting comprising computer control that reads and executes stored program instructions that cause the pumping mechanism to pump the extracted fluid according to the program to change the electrical potential difference across a nerve cell membrane in epilepsy generating brain structure by changing the ion concentration in the modulated ion-content fluid to increase the potential difference from -70 millivolts to -80 or more millivolts." As noted above, Osterholm Skladnev and Adelman et al., alone or in combination, do not teach the claimed computer control or stored program instructions as claimed in claim 49.

In sum, the proposed combination of Osterholm and other cited references do not remedy the deficiencies in Osterholm. Thus, even if the proposed combinations of Osterholm and the other cited references are deemed proper, they would not result in the claimed invention of independent claims 23, 29, and 49.

As previously noted, the pending dependent claims are patentable for at least the same reasons that independent claims 23 and 29 from which they depend are patentable, and for the additional features recited the dependent claims.

**Conclusion**

It is respectfully submitted that the pending claims are in condition for allowance. The Examiner is invited to contact the undersigned at the telephone number provided below should it be deemed necessary to facilitate prosecution of the application.

Respectfully submitted,

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